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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/582,055	05/04/2007	Antonio Giacomo Paolini	06-419	1914
20306 7590 04/06/2011 MCDONNELL BOEHNEN HULBERT & BERGHOFF LLP 300 S. WACKER DRIVE 32ND FLOOR CHICAGO, IL 60606				
EXAMINER PORTER, JR, GARY A				
ART UNIT		PAPER NUMBER		
3766				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/582,055

**Applicant(s)**

PAOLINI ET AL.

**Examiner**

GARY A. PORTER, JR

**Art Unit**

3766

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 January 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3,5,7-9,11-13,16,17,19-21,23-26 and 28-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5,7-9,11-13,16,17,19-21,23-26 and 28-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claim 1-3, 5, 7-9, 11-13, 16, 17, 19-21, 23-26 and 28-31 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.

The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

3. Specifically, Applicants' independent claims states "the latency function depends on: filter band signal amplitudes of a plurality of surrounding filter bands and filter band frequencies of the plurality of surrounding filter bands, relative to the filter band frequency of the particular stimulation electrode." However, Applicants' specification states that the filter band frequencies constrain the latency function. The latency function does not depend on the filter band frequencies. In order for a function to depend on a quantity or variable, the value of that variable must directly affect the calculation of the function. The equation and description on page 11 of Applicants' specification and in Claims 7 and 19 of Applicants' claims illustrate plainly that the amplitudes  $A_x$  and  $A_y$  are the dependent variables of the latency function. It is clear from this equation that frequency is not considered in the calculation of the function.

Instead, as indicated in Applicants' specification, the calculated results are constrained to a particular frequency range (page 12, lines 5-14). In order to overcome this rejection, the Examiner suggests amending the claim language to clarify that the latency function does not depend on the frequency but instead is constrained by the frequency.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-3, 5, 7-9, 11-13, 16, 17, 19-21, 23-26 and 28-31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Specifically, Applicants' independent claims 1, 13 and 16 states "determining activation times for those stimulation electrodes using a base stimulation strategy...applying the temporal adjustments to the activation times of the stimulation electrodes such that activation of stimulation electrodes corresponding to lower-amplitude filter band signals are delayed relative to activation of stimulation electrodes corresponding to higher-amplitude filter band signals." From this claim, it is evident that the base stimulation strategy claimed is the application of the determined temporal adjustments to lower and higher amplitude components of the filter band signals. This is inferred since both steps, i.e. the base strategy and the application of temporal adjustment step, result in an activation time of the stimulus to be applied. However, as currently claimed, Applicants' have incorporated "a base stimulation strategy" and a separate strategy for adjusting and determining the activation times of the stimulation

device. If Applicants' are indeed claiming two different activation times and therefore an initial base stimulation strategy and a subsequent adjustment to that strategy, the Examiner suggests further clarifying that the activation times determined by the base strategy are initial activation times and the activation times determined by applying the temporal adjustments are adjusted activation times. As currently claimed, it is unclear which steps are part of the base strategy and which steps are part of an entirely different strategy.

7. Additionally, the independent claims require "the latency function depends on: filter band signal amplitudes of a plurality of surrounding filter bands and filter band frequencies of the plurality of surrounding filter bands, relative to the filter band frequency of the particular stimulation electrode." However, Applicants' claims only relate the temporal adjustment determined by the latency function to signal amplitude and not frequency. Applicants' have failed to link the consideration of frequency to the temporal adjustment. Furthermore, Applicants' specification only supports a latency function that depends solely on signal amplitude, not frequency (page 10, lines 25-27 of Applicants' specification). It appears from Applicants' specification that the latency function does not depend on frequency but instead is constrained by frequency (page 12, lines 5-14). The Examiner notes that in order for a function to depend on a quantity or variable, a change in that variable must have an effect on the calculation of that function. As can be seen in the function on page 11 and in Claims 7 and 19, the frequency of a signal does not play such a role in the function. Instead, amplitudes  $A_x$  and  $A_y$  are the variables that affect the outcome of the function. In order to be

consistent with the specification and to clearly claim the invention, the Examiner suggests Applicants" clarify that the frequencies are used to constrain the latency function instead of claiming that the latency function depends on the frequency of the signal.

### ***Response to Arguments***

8. Applicant's arguments, see pages 10-15, filed 1/07/2011, with respect to Claims 1-3, 5, 7-13, 16, 17 and 19-31 have been fully considered and are persuasive. The rejection of these claims have been withdrawn.

9. However, Applicants' newly submitted claims raise questions under 35 U.S.C. 112, first and second paragraphs that need to be addressed in order to place the claims in condition for allowance. The Examiner notes that the method of constraining a latency function by frequency and utilizing signal amplitude of a plurality of surrounding filter bands to determine temporal adjustments to stimulation activation times as indicated in the specification and as currently claimed to a degree, is not taught or suggested by McDermott (5,597,380), Faltys (2001/0031909) or Gibson (2004/0078057). The Examiner respectfully requests clarification and correction of the issues stated above in order to place the application in condition for allowance.

### ***Conclusion***

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GARY A. PORTER, JR whose telephone number is (571)270-5419. The examiner can normally be reached on Monday - Thursday, 7AM - 4PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Layno can be reached on (571)272-4949. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/GARY A PORTER, JR/  
Examiner, Art Unit 3766

/Carl H. Layno/  
Supervisory Patent Examiner, Art  
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